



PATENT APPLICATION
Mo-6422
LeA 34,055

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION OF)
MICHAEL GERLE ET AL)
SERIAL NUMBER: 09/942,465) GROUP NO.: 1711
FILED: AUGUST 29, 2001) EXAMINER: R. A. SERGENT
TITLE: AROMATIC POLYISOCYANATES)
BLOCKED BY PYRAZOLE OR)
PYRAZOLE DERIVATIVES AND THE)
PREPARATION AND USE THEREOF)

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APPEAL BRIEF

Assistant Commissioner for Patents
Alexandria, VA 22313

Sirs:

This is an appeal from the Office Action dated February 26, 2003, made final, rejecting Claims 1-15. A full statement of Claims 1-15, which are being appealed herein, is attached hereto as Appendix 1. A separate Petition for Extension of Time is being filed simultaneously herewith such that this Appeal Brief will be considered timely filed.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an enveloped addressed to: Assistant Commissioner for Patents, Alexandria, VA on 10/30/03

Date

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Name of applicant, assignee or Registered Representative

Signature

October 30, 2003

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I. REAL PARTY IN INTEREST

The real party in interest for the present appeal is the assignee Bayer AG.

II. RELATED APPEALS AND INTERFERENCES

Appellants are unaware of other appeals or interferences that will directly affect or be directly affected by or having a bearing on the present appeal.

III. STATUS OF CLAIMS

The above-referenced application was filed with Claims 1-15 are pending but stand rejected, and are the subject claims of this appeal.

IV. STATUS OF AMENDMENTS

Appellants have elected not to file an amendment after final.

V. SUMMARY OF THE INVENTION

The invention accordingly provides NCO-containing reaction products blocked at the NCO groups by 1-H-pyrazole or derivatives thereof, wherein the NCO-containing reaction products are reaction products of

- (A) one or more aromatic polyisocyanates,
- (B) one or more NCO-reactive compounds containing sulfonate and/or tert-amino groups, and
- (C) optionally, one or more further NCO-reactive compounds other than compounds (B). See page 3, ll. 9-18.

VI. ISSUES

- (1) Whether the Examiner erred in concluding that the claims are indefinite under 35 USC 112, second paragraph for using terms which are intended to have their ordinary meaning.
- (2) Whether the Examiner erred in concluding that that the claims are obvious under 35 USC 103(a) over the proposed combination of the primary reference with the secondary references where the record lacks any motivation for

reacting NCO-reactive compounds containing sulfonate and/or tert-amino groups with pyrazole, with a reasonable expectation of success.

- (3) Whether the Examiner erred in concluding that the claims are obvious under 35 USC 103(a) based on the contention that the disclosed imidazoles of the primary references and pyrazoles are isomers, and this is considered to render the substitution of pyrazoles for imidazoles of the primary references *prima facie* obvious.

VII. GROUPING OF CLAIMS

Claims 1-5 are placed in the same grouping.

VIII. ARGUMENTS

Claims 1-15, which are in the application stand rejected as being unpatentable under 35 USC 112, second paragraph and further under 35 USC 103(a) as being unpatentable over Reiff et al ('370 or '737), each in view of WO 99/52961. The rejections and how they have been overcome or avoided are discussed hereunder.

Summary of Arguments

Appellants traverse the 35 USC 112, second paragraph rejections, because the terms giving rise to the indefiniteness rejection are terms intended to have their ordinary meaning and nothing of record suggests otherwise. As such the skilled artisan would understand the terms and would therefore ascertain the metes and bounds of the claim containing the same.

Appellants traverse the 35 USC 103(a) rejection for failure to establish a *prima facie* case because the rejection is seemingly based on the ground that the claim-recited pyrazole is would have been recognized as an isomeric substitute for imidazole, and as such the skilled artisan would have selected the pyrazole from enumerable blocking agents, and employ them for blocking NCO-reactive compounds containing sulfonate and/or tert-amino groups. It is well established in the law that the mere fact a combination can be made does not make the combination obvious absent

some basis in the art for making said modification. The record lacks evidence or practical reason supporting the proposed combination.

Details of Arguments

35 USC 112, Second Paragraph Rejection

Claim 8 stands rejected under 35 USC 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which Appellant regards as the invention. More specifically, the claim stands rejected because of the term "at one and the same time" and further because of the term "desired".

Appellants respectfully submit that the terms "at one and the same time" and "desirable", as used herein would be clearly understood by the skilled artisan to denote simultaneously. The terms as used here would be understood as having their ordinary meaning. Nothing herein otherwise indicates that Appellants intend the terms, and for that matter the claims, to mean anything other than their ordinary meaning. For his part, the Examiner has not pointed facts which will suggest that the terms would have some other meanings. It is well established in the law that a claim that is understandable to one skilled in the art and that defines the subject matter which an Appellant regards as his invention meets the requirement of 35 USC 112, second paragraph, In re Gardner, 166 USPQ 138 (CCPA 1970).

In this case, claims reciting terms intended to have their ordinary meaning and define clearly and distinctly the subject matter which Appellants intend to be their invention. Therefore, the claims meet the requirements of 35 USC 112, second paragraph. As such Appellants pray for the reversal of the 35 USC 112, second paragraph rejection.

35 USC 103(a) Rejection

Claims 1-15 stand rejected under 35 USC 103(a) as being unpatentable over Reiff et al ('370 or '737 or '482) in view of WO 99/52961 on the grounds that:

"The primary references disclose the production of blocked isocyanates and their use with water-proofing and oil-proofing

fluorocarbon resins as textile treating compositions, wherein the blocked isocyanates are the reaction product of polyisocyanates, including aromatic isocyanates, active hydrogen compounds containing ionic or potential ionic groups, polyoxyalkylene ethers, and blocking agents."

In acknowledging the differences between the claims and the primary references, the Examiner correctly noted that:

"Though the primary references disclose several blocking agents, including imidazoles, the reference is silent with respect to the use of pyrazole blocking agents..."

In an attempt to cure the deficiency of the primary reference in failing to teach the use of pyrazole blocking agents, the Examiner cites the secondary references for the proposition that it teaches that:

"... pyrazoles were known blocking agents for self dispersible isocyanates, to be used as textile finishes with fluorocarbon polymers, at the time of the invention. Furthermore, it was known at the time of the invention that the use of pyrazole blocking agents within polyisocyanate compositions to be used as textile finishes yields finishes having improved oil- and water-repellent properties and improved fastness properties. This position is supported by the teachings of the secondary reference. See pages 2 and 3."

The Examiner therefore based the conclusion of obviousness on the grounds that:

"This disclosure, in combination with the fact that the disclosed imidazoles of the primary references and pyrazoles are isomers, is considered to render the substitution of pyrazoles for imidazoles of the primary references *prima facie* obvious."

Arguments Relating To Issue 1

Appellants traverse the rejection because there is no basis in the cited references which would have led the skilled artisan to substitute pyrazoles for imidazoles as blocking agents for NCO-reactive compounds containing sulfonate and/or tert-amino groups, with reasonable expectation of success.

The Examiner has acknowledged that the primary references fail to teach or suggest substitution of pyrazoles for the blocking agents disclosed by the references. The Examiner's basis for curing the failure of the primary references which is seemingly based on the assertion that pyrazole would have been employed as isomeric substitute for imidazole is untenable. It is untenable because it fails to satisfy two requirements for establishing prima facie obviousness. First, nothing of record suggests that the use of pyrazole as an isomeric substitute for imidazole. Secondly the record by way of the secondary reference discloses pyrazoles in exhaustively blocking a different kind of polyisocyanate. That is an oligomeric isocyanate reacted in part with polyethylene glycol monoalkyl ether, which optionally contains propyleneoxy units and optionally a chain extender. See page 2 of the secondary reference, WO 99/52961.

Clearly the teaching of pyrazole blocking agents for the referenced oligomeric isocyanates does not suggest the desirability of substituting pyrazole for imidazole as blocking agents for NCO-reactive compounds containing sulfonate and/or tert-amino groups.

To be sure, pyrazoles are generally disclosed as blocking agents in the preparation of compositions including those useful in the preparation of textile finishes. However, the general knowledge does not preempt patentability of inventions that are different and unobvious. In this regard, Appellants direct the Board's attention to the captioned application in its background section which discusses and distinguishes the prior art, including the prior art use of pyrazole. Illustratively, at page 2, lines 4-10, captioned application acknowledges that the prior art, EP-A 942,023 discloses polyisocyanates that are blocked by pyrazole derivatives and that are hydrophilized by incorporated ethylene oxide groups or hydrocarboxylic acids.

However, the prior art compositions comprising blocked isocyanates are disadvantaged by problems of permanent hydrophilicity; hence, inadequate hydrophobicity which would lead the skilled artisan away from the claims. More

specifically, the captioned application at page 2, line 11 through page 3, line 3 described the disadvantages as follows:

"However, such products are not suitable for textile applications as described in EP-A 537,578 or U.S. Patent 4,834,764, since the amount of incorporated ethylene oxide groups that is necessary for hydrophilization leads to permanent hydrophilicity and hence to an inadequate hydrophobicizing effect of the textile finish. A further disadvantage is the ease of removal of such hydrophilic products by washing. Also, the use of incorporable hydroxycarboxylic acids for hydrophilicizing blocked isocyanates provides products that cannot be used for textile applications, since they are not sufficiently compatible with other formulation ingredients. For instance, the finishing liquors may frequently also have to include methylolated urea or melamine derivatives, which are only adequately effective in the acidic pH range. Similarly, other widely used liquor components, for example, flame retardants, or aminosilicone emulsions used as softeners, frequently require that the liquor be adjusted to an acidic pH. However, polyisocyanates hydrophilized with carboxyl groups are not stable in acids because of the relatively high pK_a value of carboxylic acids and consequently lead to precipitates.

Prior art products are further disadvantageous in that they are usually inconvenient to produce. It is frequently necessary to use large amounts of external emulsifiers and high shearing forces to disperse the blocked polyisocyanates. In the case of products hydrophilized using incorporable ionic groups, the isocyanate groups are so sensitive that frequently it is necessary to use a two-step process whereby the isocyanate is blocked in the first step and the ionic groups are only incorporated subsequently."

Appellants submit that in view of these disadvantages and in the absence of evidence or practical reason of record suggesting substitution of pyrazole for imidazole, the record is insufficient to support a *prima facie* case of obviousness. Appellants, therefore pray for reversal of the rejection based on the factually unsupported assertion that the skilled artisan would have combined the primary and secondary references.

Answer to Issue 2

Appellants submit that the Examiner erred in concluding that the claims are obvious under 35 USC 103(a) based on the contention that the disclosed imidazoles of the primary references and pyrazoles are isomers, and this is considered to render the substitution of pyrazoles for imidazoles of the primary references *prima facie* obvious.

As a general matter, isomerism by itself should not raise a prima facie case of obviousness, Ex parte Mowry, 91 USPQ 219, 221 (Bd. Pat. App. 1950); In re Grabiak, 226 USPQ 870, 872 (Fed. Cir.1985). To raise a prima facie case of obviousness, the Examiner must establish a basis for the desirability of making a substitution of one isomer for the other, with a reasonable expectation of success. The record is devoid of any factual support for the proposed substitution. Therefore, Appellants pray for the reversal of the Examiner on this issue.

Appellants further discuss the references including cited pages 2 and 3 of the secondary reference for the purpose of showing that the preponderance of the evidence or technical reasoning of record would not support a prima face case of obviousness.

US 5,508,370 relates to a blocked polyisocyanate having an average molecular weight of 800 to 25,000 (preferably 1000 to 5000) and containing (1) blocked isocyanate groups corresponding to an NCO content of 5 to 20 wt. % (preferably 10 to 20 wt. %), calculated as free NCO, relative to unblocked polyisocyanate (that is, the polyisocyanate of the invention taken as having free NCO groups instead of blocked NCO groups), (2) 1 to 75 (preferably 2 to 25) milliequivalents (meq) of ionic groups per 100 g of blocked polyisocyanate, and (3) 3 to 40 wt. % of polyalkylene oxide units relative to the blocked polyisocyanate, wherein said blocked polyisocyanate is prepared by a process comprising reacting (a) organic polyisocyanates, (b) NCO-reactive compounds containing ionic or potentially ionic groups, (c) polyalkylene ethers, (d) NCO-blocking agents, and (d) optionally, other NCO-reactive compounds different from components (b), (c) and (d), wherein said process is carried out by either (A) reacting components (a), (b), (c) and, optionally, (e) to form an unblocked polyisocyanate containing incorporated polyalkylene oxide units and ionic groups and then reacting said unblocked polyisocyanate with NCO-blocking agent (d) (which blocks free NCO groups) other than an alkali metal bisulfite to form the blocked polyisocyanate, or (B) reacting components (a), (c) and, optionally, (e) with an alkali-metal bisulfite serving as both NCO-blocking agent (d) and NCO-reactive component (b) to form the blocked polyisocyanate.

This patent does not teach or suggest the desirability of employing pyrazole as a blocking agent for NCO-reactive compounds containing sulfonate and/or tert-amino groups.

US 5,693,737 relates to a method for preparing crease-resistant textiles comprising applying to a textile material a blocked polyisocyanate having an NCO functionality of from 2.2 to 4.5, based on the unblocked polyisocyanate, and an average molecular weight of 800 to 5000 and containing (1) blocked isocyanate groups corresponding to an NCO content of 5 to 20 wt. %, calculated as free NCO, relative to unblocked polyisocyanate, (2) 1 to 75 milliequivalents of ionic groups per 100 g of blocked polyisocyanate, and (3) 3 to 40 wt. % of polyalkylene oxide units relative to the blocked polyisocyanate, wherein said blocked polyisocyanate is prepared by a process comprising reacting (a) an organic polyisocyanate, (b) an NCO-reactive compound containing ionic or potentially ionic groups, (c) a poly (C.sub.2 -C.sub.6, alkylene) ether started on a C.sub.1 -C.sub.6 monohydric alcohol, (d) an NCO-blocking agent, and (e) optionally, other NCO-reactive compounds different from components (b), (c), and (d), wherein said process is carried out by reacting components (a), (c) and, optionally, (e) with an alkali metal bisulfite serving as both NCO-blocking agent (d) and NCO-reactive compound (b) to form the blocked polyisocyanate.

This patent does teach or suggest the desirability of using pyrazole a blocking agent for NCO-reactive compounds containing sulfonate and/or tert-amino groups.


The secondary reference WO 99/52961 relates to self-dispersible mixture (G) of oligomeric isocyanates reacted in part with polyethylene glycol monoalkyl ether (A), which optionally contains propyleneoxy units, and optionally with a chain extender (K) and exhaustively blocked with an isocyanate-blocking pyrazole (B), which are useful as auxiliaries in the finishing fibrous material with oleophobicizing and/or hydrophobicizing finishes (F) comprising fluorocarbon polymers.

At page 2, cited by the Examiner, the reference in pertinent parts, merely states that pyrazoles are used in blocking the specified oligomeric isocyanates. This statement does not suggest the substitution of pyrazoles or imidazoles in blocking NCO-reactive compounds containing sulfonate and/or tert-amino groups.

At page 3, cited the Examiner, the reference in pertinent parts, merely states that the oligomeric isocyanates are derived from oligomers of aliphatic diisocyanates or diphenylmethane diisocyanates or polyphenylenepolymethylene polyisocyanate. This statement does not suggest the substitution of pyrazoles or imidazoles in blocking NCO-reactive compounds containing sulfonate and/or tert-amino groups.

Net: Appellants submit that the skilled artisan would be able to ascertain the scope and content of the claims using terms having their ordinary meaning. Therefore, the claims are not indefinite. Appellants further submit that the Examiner's conclusion of obviousness is not factually supported by evidence or technical reason of record, and is therefore insufficient to support a prima facie case of obviousness. In view of the foregoing, Appellants Pray for the reversal of the Examiner.

Respectfully submitted,

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Appendix 1

1. An NCO-containing reaction product blocked at the NCO groups by 1-H-pyrazole or a derivative thereof, wherein the NCO-containing reaction product is a reaction product of

- (A) one or more aromatic polyisocyanates,
- (B) one or more NCO-reactive compounds containing sulfonate and/or tert-amino groups, and
- (C) optionally, one or more further NCO-reactive compounds other than compounds (B).

2. A blocked NCO-containing reaction product according to Claim 1 wherein the aromatic polyisocyanate (A) has an average molecular weight of 500 to 5000 g/mol.

3. A blocked NCO-containing reaction product according to Claim 1 wherein the aromatic polyisocyanate (A) has an NCO content of 8-20% by weight.

4. A blocked NCO-containing reaction product according to Claim 1 wherein the reaction product is blocked at the NCO groups with a dimethylpyrazole derivative.

5. A blocked NCO-containing reaction product according to Claim 4 wherein the reaction product is blocked at the NCO groups with 3,5-dimethylpyrazole.

6. A blocked NCO-containing reaction product according to Claim 1 wherein the NCO-reactive compound (B) possesses sulfonate groups.

7. A blocked NCO-containing reaction product according to Claim 1 wherein further NCO-reactive compounds (C) are present and are compounds containing polyoxyalkylene groups.

8. A process for preparing a blocked NCO-containing reaction products according to Claim 1 comprising reacting components (A), (B), and optionally (C) and 1-H-pyrazole or a derivative thereof as a blocking agent with each other at one and the same time or in any desired order.

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9. A preparation comprising
 - (a) a blocked NCO-containing reaction product according to Claim 1, and
 - (b) at least one emulsifier and/or dispersant.
10. A method for treating textiles, paper, or leather comprising applying a blocked NCO-containing reaction product according to Claim 1 to a textile, paper, or leather.
11. A method for imparting hydrophobic/oleophobic or antistain properties to textiles comprising applying a blocked NCO-containing reaction product according to Claim 1 in combination with a fluorinated organic compound to a textile.
12. A method for imparting hydrophobic/oleophobic or antistain properties to textiles comprising applying a blocked NCO-containing reaction product according to Claim 1 in combination with a hydroxyl-free fluorinated organic compound to a textile.
13. A method for treating textiles to reduce the wrinkling and shrinking of the treated textiles comprising applying a blocked NCO-containing reaction product according to Claim 1 to a textile.
14. A method for textile printing comprising applying to a textile a printing paste containing a blocked NCO-containing reaction product according to Claim 1 as a crosslinker.
15. A method for antifelt finishing of wool or wool blends comprising applying a blocked NCO-containing reaction product according to Claim 1 to wool or a wool blend.